Administration

Report to the Consumer on Water Quality

January 1, 2001 - December 31, 2001

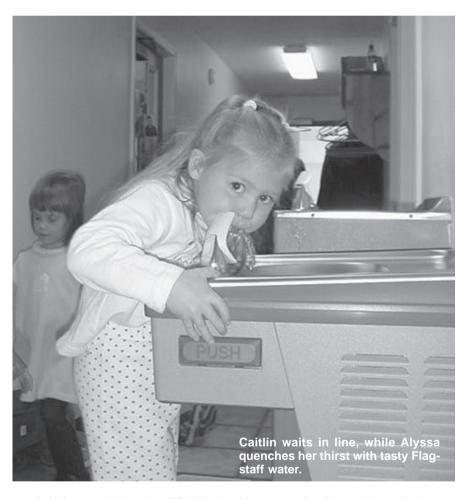
Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

Díí kwe'é naaltsoos hasht'eelyaayígíí 'éí nit haz'ánígi tó baa 'áháyáá dóó yá'át'ééh óolzinígíí yaa halne'.

Doo bik'i'dinitiiingóó da, t'áá shoodí t'áá háida ta' níká'adoolwot dóó hazhó'ó vee nit ch'íhodoo'áát.

Dear Water Consumer,

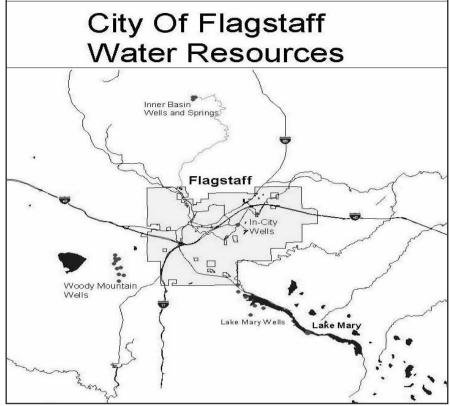
We are pleased to present you the 2001 City of Flagstaff *Report to the Consumer on Water Quality*. This Water Quality Report outlines where your drinking water comes from, how it is treated, and the results of tests performed to ensure your water meets all drinking water requirements. As mandated by



the Safe Drinking Water Act (SDWA), the "Consumer Confidence Report" also informs you of the contaminant levels in your drinking water, among other important health information.

It is the goal of the City of Flagstaff Utilities Department to provide you with high-quality, safe, drinking water that not only meets, but also exceeds all federal and state standards set by the Environmental Protection Agency (EPA), and the Arizona Department of Environmental Quality (ADEQ). Last year we conducted 3,670 tests for 141 contaminants in our water. As in years past, we did not detect contaminant levels higher than the EPA, or the ADEQ allows. There were zero violations of the Safe Drinking Water Act during 2001.

In an effort to attain our goals, we strongly encourage public input and participation in our community's decisions affecting your drinking water. Regular Water Commission meetings occur on the third Thursday of each



month. The meeting locations are posted on the official City bulletin board at City Hall. Meetings begin at 4:00 PM and you are always welcome.

Copies of this report are available at the Utilities Administration Office, City Hall 211 West Aspen Avenue, Flagstaff, AZ 86001, or on our web-site at www.flagstaff.az.gov. We hope this report provides you with valuable information about your drinking water that is easy to understand, and confirms that you can count on the City of Flagstaff for quality on tap. Our results show it.

Ron Doba Director Utilities Department

Water Sources

In 2001 your Utilities Department distributed approximately 2.87 billion gallons of water to Flagstaff customers. Total water production decreased from year 2000 levels, due to good winter and monsoon season, as well as effective conservation programs.

The City of Flagstaff is supplied by surface water from Upper Lake Mary and the Inner Basin of the San Francisco Peaks. We also pump groundwater from the Woody Mountain Wellfield, Lake Mary Wellfield, and other "Local" wells, which tap the Coconino and Supai Aquifers. These sources blend in the water distribution system and the amount of water coming from each



Drilling at the Interchange Well, one of two new "local" wells drilled last year. Crews worked day and night to complete the project.

source varies throughout the year.

What does the Following Table Mean?

The table shows the results of our water-quality analyses. Every regulated contaminant that we detected in the water, even in minute traces, is listed here. The information in the following table only addresses detected contaminants. We have chosen not to report information for contaminants tested for and not detected. The table contains the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health, the amount detected, the usual sources of such contamination, footnotes explaining our findings, and a key to units of measurement. The data you see in the table are the result of testing completed during calendar year 2001 in compliance with current regulations.

Definitions:

Maximum Contaminant Level (MCL): The highest level of a regulated contaminant that is allowed in drinking water. The MCL is set as close to the MCLG (see below) as feasible using the best available treatment technology. The MCL is set at very stringent standards. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having their health compromised.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. The MCLG allows for a margin of safety.

Action Level (AL): The concentration of a contaminant, which if exceeded, triggers treatment or other requirement that a water system must meet.

Treatment Technique (TT): A required process intended to reduce the level of a

Unit MCL MCLG Highest Range Major Sources

Water Quality Table

Contaminant	Date Tested	Unit	MCL	MCLG	Highest Detected Amount*	Range	Major Sources	Violation
Inorganic	Contan	inant	ts					
Arsenic	(9/5/00) ²	ppb	50 ¹	N/A	8.9 ²	1.2-8.9	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production waste.	NO
Barium	(9/5/00) ²	ppm	2	2	0.642	0.0054- 0.64	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	NO
Chromium	(9/5/00) ²	ppb	100	100	6.7 ²	<1 - 6.7	Discharge from steel and pulp mills; erosion of natural deposits	NO
Copper ⁹	9/8/01	ppm	Action Level 1.3	1.3	0.520	0.050 – 0.520	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	
Fluoride	6/21/01	ppm	4	4	0.19	0.07 – 0.19	Erosion from natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	
Lead ⁹	8/26/01	ppb	Action Level 15	Zero	6.3	<0.50 – 6.3	Corrosion of household plumbing systems; erosion of natural deposits	NO
Nitrate	6/21/01	ppm	10	10	0.2	<0.1 – 0.2	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	NO
Sodium	6/21/01	ppm	N/A	N/A	6.5	3.2 – 6.5	Natural erosion	NO
Sulfate	6/21/01	ppm	N/A	N/A	14	2.18 - 14	Natural erosion, industrial wastes	NO

Turbidity ³	Every 4 hrs	NTU	5	N/A	0.46	.0146	Soil runoff	NO
Turbidity ³	Every 4 hrs	NTU	< 0.54	N/A	< 0.55	.0146	Soil runoff	NO
Total Coliform (including fecal coliform and E. coli)	60 samples per month	P/A	<5% ⁶	Zero	2%	0 – 2 %	Naturally present in the environment; fecal coliforms and <i>E. coli</i> come from human and animal fecal waste	NO

Volatile Organic Contaminants

voiathe Organic Contaminants									
	TTHMs ⁷	0 . 1	ppb	100	none	16.2 ⁸	12.7 -	By-product of drinking	NO
	(total	Quarterly					16.2	water chlorination.	
	trihalomethane)								

contaminant in drinking water.

Key to Table:

AL = Action Level

ppm = Parts per million, or milligrams per liter

MCL = Maximum Contaminant Level

ppb = Parts per billion, or micrograms per liter

MCLG = Maximum Contaminant Level Goal

< = Less than

NTU = Nephelometric Turbidity Units

P/A = Presence / Absence

pCi/I = Picocuries per liter (a measurement of radioactivity)

Water Quality Table Footnotes:

- 1) The current EPA standard for arsenic in drinking water is 50 ppb. Effective 2006 this standard will be lowered to 10 ppb.
- 2) Date Tested is the test date for the Highest Detected Amount. The date for Arsenic, Barium and Chromium is 9/5/00, because well water is tested every three years.
- 3) Turbidity is a measurement of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our surface water filtration system and an indicator of the absence of microbiological contamination.
- 4) 95% of the time.
- 5) 100% of the time.
- 6) No more than 5% of samples may be total coliform positive in a month. Every sample that has total coliforms must be analyzed for either *E. coli* or fecal coliforms to determine whether human or animal fecal matter is present (fecal coliforms and *E. coli* are part of the total coliform group). There may not be any fecal coliforms or *E. coli*. Any confirmed fecal coliform or *E. coli* analysis results in a violation.
- 7) Compliance with TTHMs is based on a running annual average. The highest running annual average during 2001 was 16.2 ppb.
- 8) Highest running average.
- 9) Copper and Lead contamination is typically derived from household plumbing and therefore tested from at the tap.
- * This column shows the results of tests on our finished water.

Other Contaminants

Haloacetic Acids - The distribution system was sampled during the latter part of 2001 to monitor for a group of disinfection by-products known as



Lab Director, Tom Scott tests for bacteria in the water.

CityScape

Administration

haloacetic acids (HAA5). This group of disinfection by-products (Total HAA5) consists of the sum of dichloroacetic acid, trichloroacetic acid, monochloroacetic acid, monobromoacetic acid, and dibromoacetic acid. The amounts detected ranged from <0.001 mg/L to 0.031 mg/L. A maximum contaminant level of 0.060 mg/L for total HAA5s went into effect on January 1, 2002.

Radon - The Foxglenn Well was monitored for radon during 2001. The amount detected in the finished water of the well was $96 \pm 13~\text{pCi/L}$. This amount is below the level that is being considered for the maximum contaminant level (MCL) for radon which is 300 pCi/L.

Additional Health Information

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS, or other immune system disorders. Some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care provider. EPA and Center for Disease Control guidelines, on appropriate means to lessen the risk of infection by Cryptosporidium, are available from the Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

Microbial Contaminants: Viruses, bacteria, and protozoan, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic Contaminants: Salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and Herbicide: Which may come from a variety of sources such as agriculture, storm-water runoff, and residential uses.

Organic Chemical Contaminants: Include synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm-water runoff and septic systems. **Radioactive Contaminants:** Which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration



Clarifiers and storage tank at the Lake Mary Water Treatment Plant

regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Revised Drinking Water Regulations

Arsenic – Arsenic is a naturally occurring mineral known to cause cancer in humans at high concentrations. Epidemiological studies conducted in other countries indicate that high concentration of arsenic in drinking water, at several hundreds of parts per billion, have been shown to cause cancer. However there is insufficient data and information about lower levels of arsenic in the drinking water.

Recently the EPA lowered their standard for arsenic in drinking water form 50 ppb to 10 ppb, effective 2006. While your drinking water meets EPA's new standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

 $\label{eq:haloacetic} \textbf{Haloacetic Acids} - \text{Haloacetic acids are disinfection by-products that are formed when chlorine is used as the disinfectant. These compounds can increase the risk of cancer, and became regulated as of January 1, 2002 with a MCL of 0.060 mg/L.}$

Thank you for reading this important information on your water's quality. We'll be happy to answer questions about the City of Flagstaff's water. Call Jack Rathjen at the Lake Mary Water Treatment Plant at (928-774-0262), or find information on your water system on the City of Flagstaff web-site at www.flagstaff.az.gov. Water quality data for community water systems throughout the United States is also available at www.waterdate.com.

*The Utilities Department would like to give a special thanks to the Department of Modern Languages at NAU, for their assistance with the Navajo translation.